



# Luminate-Engage-Deliver: LED

LEADING THE LIGHTING REVOLUTION

2012 DOE Solid-State Lighting Manufacturing R&D Workshop  
Opportunities for Improving the U.S.'s role in the Global Supply Chain  
June 13-14, 2012



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# Vision

Transform **GE** Lighting Solutions  
to a best in class, **customer**  
**centric** business

# Why take this approach?

## Issues

- Need to differentiate product offering from many competitors, creating value for our customers
- Volume is difficult to predict
- Product lifecycles are extremely short

**Conclusion – build an extremely long Supply Chain out of Asia**

# Why take this approach?

## Issues

- Need to differentiate product offering from many competitors, creating value for our customers
- Volume is difficult to predict
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Build an extremely agile Supply Chain near customer demand



Luminate  
TRANSFORM THE BUSINESS

# Assembly Operations



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# Started with US Assembly

## Align assembly strategy to support Vision

- Developed short cycle assembly methods - 6 weeks to 6 days
- Utilized lean techniques for parts replenishment - New Mantra – “Parts will always be available”
- Focus on Quality – 99% is not good enough
- “Everyone” is focused on the customer





# Engage

BE A TRANSFORMATION LEADER

## Enhance Goals of Program Teams on NPI to include Platform Design/Reuse



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# Standardize platforms are key

## Mechanical Design

### Current State

- Focused NPI team's, compromise platform design for speed
- Complexity – tool maintenance, utilization, and EOL

### Desired State

- Balance design for speed with DFM
- Long term speed
- Leverage sunk cost
- Diversify risk

## Electronics Design

### Current State

- Drivers designed to support specific application
- Component selection isolated within design team

### Desired State

- Standardized electronic platform within and across product families
- Create electronics standardization team to ensure design platform and component standardization
- Consider partnership with electronics distributor to leverage buy, standardization and EOL

## NPI Similar Products

Product 1



Product 2



## Contract Manufacturer Supplier 1      Supplier 2

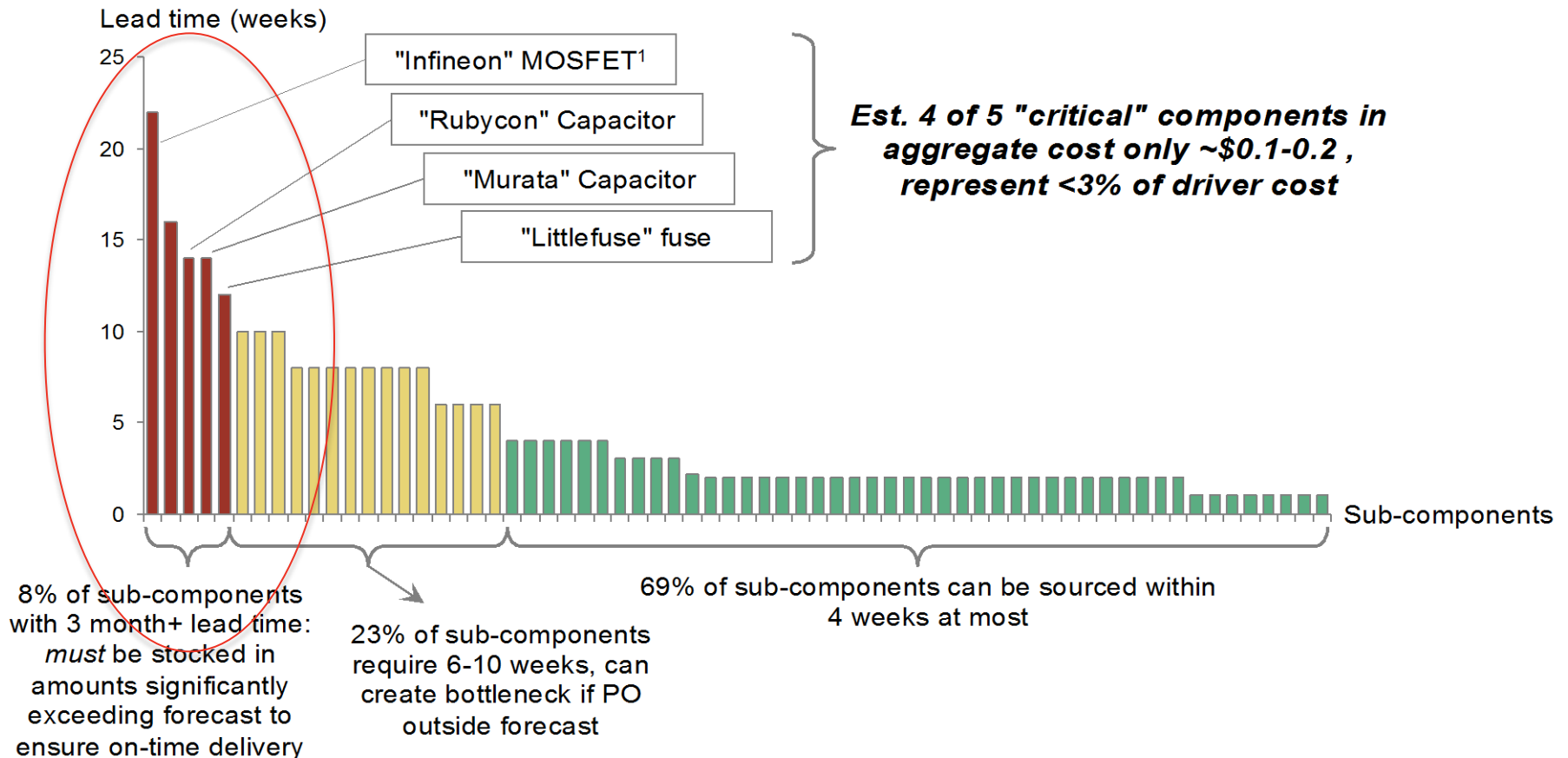
### Electronics Assemblies





# Component Selection

Lead times for Par30-dimmable lamp Driver



# A new way of thinking, suppliers . . .

## Traditional Focus

- Cost
- Payment Terms

## Customer Centric Focus

- Few suppliers
- Frequent deliveries
- High quality
- Manufacturing Experts
- Competitive Cost
- Two-way relationship



# Deliver

EXCEED 2012 GOALS

## Focus on Vertical Integration



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# How can the DOE help?

## Opportunities – “Blocking & Tackling”

- Many companies, like GE, are focused on ROI when making investment decisions, so make funding available for large investment based on job creation.

# Key Investment in US Plants

Paint System



Stamping



Flexible punch/Brake system



# Key Investment in US Plants – continued



**Overmolding**



**Plastic Injection**



**SMT/Electronics assembly**

# How can the DOE help?

## Opportunities – “Blocking & Tackling”

- Many companies, like GE, are focused on ROI when making investment decisions, so make funding available for large investment, based on job creation.
- Opportunities to help with rehiring and bringing back process expertise.





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# Thank You



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